Appl. No.: 10/608,580
Amdt. Dated: January 4, 2007
Reply to Office Action of: November 8, 2006

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. **(previously presented)** A method for depositing a doped glass layer on a surface of a substrate comprising the step of:

reacting a precursor compound of the formula $(R_3SiO)_jM(OR')_k$ to deposit a doped glass layer suitable for photonic devices on the surface of the substrate;

wherein M is Ti or Zr; R is an alkyl moiety; R′ is an alkyl moiety; j is 1, 2, 3 or 4; and k=4-j, and

wherein said doped glass layer on the substrate has a Si:M ratio of 1:1, 2:1, 3:1 or 4:1 depending on the value of j; and

wherein R is selected from the group consisting of methyl, ethyl and propyl; and R′ is selected from the group consisting of methyl, ethyl, *n*-propyl, isopropyl, *n*-butyl, isobutyl, *t*-butyl and *s*-butyl.

2. **(cancelled)**

3. **(cancelled)**

4. **(previously presented)** The method of claim 1, wherein the doped glass layer is deposited using a CVD process.

5. **(withdrawn)** The method of claim 4 wherein the CVD process is an inside vapor deposition process or an outside vapor deposition process.

6. **(previously presented)** The method of claim 1, wherein the reacting step is performed using a PECVD process.

7 - 8 **(cancelled)**

9. **(withdrawn)** The method of claim 1, wherein the doped glass layer is deposited using a flame hydrolysis deposition process.

10. **(withdrawn)** The method of claim 9 wherein the doped glass layer is deposited as a layer of doped glass soot particles, and wherein the method further comprises the step of consolidating the soot particles to a homogeneous doped glass film by heat treatment.

11. **(withdrawn)** The method of claim 1 wherein the precursor compound of the formula $(R_3SiO)_jM(OR')_k$ is mixed with a silica precursor before deposition of the doped glass layer; and when said silica precursor is admixed with the precursor $(R_3SiO)_jM(OR')_k$, the resulting glass product has a non-stoichiometric Si:M ratio relative to j, including a value greater than j.

12. **(withdrawn)** The method of claim 11, wherein the silica precursor is selected from the group consisting of tetraethoxysilane, silane, disilane, tetramethylsilane, trimethylsilane, dimethylsilane, methylsilane, tetraaminosilane, triaminosilane, diaminosilane, aminosilane, tetrakis(diethylamino)silane, octamethylcyclotetrasiloxane, tetramethylcyclotetrasiloxane and diacetoxydi-*s*-butoxysilane.

13. **(previously presented)** The method of claim 1, wherein the compound of formula $(R_3SiO)_jM(OR')_k$ is chosen from the group consisting of tetrakis(trimethylsiloxy)titanium, tetrakis(trimethylsiloxy)zirconium, tris(trimethylsiloxy)isopropoxytitanium, tris(trimethylsiloxy)isopropoxyzirconium, bis(trimethylsiloxy)diisopropoxytitanium, bis(trimethylsiloxy)diisopropoxyzirconium, (trimethylsiloxy)triisopropoxytitanium, and (trimethylsiloxy)triisopropoxyzirconium.

14-25 **(cancelled)**

26. **(previously presented)** A method of making a planar waveguide comprising the steps of:

using a precursor compound of the formula $(R_3SiO)_jM(OR')_k$ to deposit a doped glass layer on the surface of a substrate, wherein M is Ti or Zr; R is an alkyl moiety; R' is an alkyl moiety; j is 1, 2, 3 or 4; and k=4-j; and

using standard photolithographic techniques to form the planar waveguide from the doped glass layer

wherein R is selected from the group consisting of methyl, ethyl and propyl; and R' is selected from the group consisting of methyl, ethyl, *n*-propyl, isopropyl, *n*-butyl, isobutyl, *t*-butyl and *s*-butyl.

27. **(withdrawn)** A method of making an optical fiber comprising the steps of:

making an optical fiber preform by using a precursor compound of the formula $(R_3SiO)_jM(OR')_k$ to deposit a doped glass layer on the surface of a substrate, wherein M is Ti or Zr; R is an alkyl moiety; R' is an alkyl moiety; j is 1, 2, 3 or 4; and k=4-j; and

drawing the optical fiber preform into an optical fiber.

28. **(withdrawn)** The method according to claim 26, wherein the precursor compound of the formula $(R_3SiO)_jM(OR')_k$ is mixed with a silica precursor before deposition of the doped glass layer; and when said silica precursor is admixed with the precursor $(R_3SiO)_jM(OR')_k$, the resulting glass product has a non-stoichiometric Si:M ratio relative to j, including a value greater than j.

29. **(withdrawn)** The method according to claim 27, wherein the precursor compound of the formula $(R_3SiO)_jM(OR')_k$ is mixed with a silica precursor before deposition of the doped glass layer; and when said silica precursor is admixed with the precursor $(R_3SiO)_jM(OR')_k$, the resulting glass product has a non-stoichiometric Si:M ratio relative to j, including a value greater than j.

30. **(previously presented)** The method of claim 26, wherein the compound of formula $(R_3SiO)_jM(OR')_k$ is chosen from the group consisting of tetrakis(trimethylsiloxy)titanium, tetrakis(trimethylsiloxy)zirconium, tris(trimethylsiloxy)isopropoxytitanium, tris(trimethylsiloxy)isopropoxyzirconium, bis(trimethylsiloxy)diisopropoxytitanium, bis(trimethylsiloxy)diisopropoxyzirconium, (trimethylsiloxy)triisopropoxytitanium, and (trimethylsiloxy)triisopropoxyzirconium.